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Title of the Invention: Cosmetic Make-up
Composition

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SPECIFICATION

1. TITLE OF THE INVENTION

Cosmetic Make-up Composition

2. CLAIMS

(1) A cosmetic make-up composition characterized in that the composition includes a volatile oil agent, a film-forming agent, a powder base agent, and a plasticizer, as essential components.

(2) The cosmetic make-up composition according to Claim 1, characterized in that the volatile oil agent comprises a dimethylpolysiloxane having a low molecular weight (viscosity: 1.5 CS) and a cyclic polydimethylsiloxane.

(3) The cosmetic make-up composition according to Claim 1, characterized in that the cyclic polydimethylsiloxane is a pentamer and/or hexamer.

3. DETAILED DESCRIPTION OF THE INVENTION

[Field of Industrial Application]

The present invention relates to a novel cosmetic make-up composition, and has as an object to provide a cosmetic make-up composition exhibiting good cosmetic durability and non-color transfer, giving excellent feeling to the skin, as well as having high safety.

[Prior Art]

Conventional cosmetic make-up compositions had disadvantages such as that they cannot exhibit cosmetic

durability over time due to secretion of perspiration and sebum, that the make up on movable parts such as the eyelids easily comes off by the physical movement thereof, and that the make-up color is transferred to other objects by friction (hereinafter referred to as "color transfer"), thereby several reapplications of make up, and staining clothes and objects with which the make up contacts.

In order to solve the problems described above, the cosmetic make-up compositions including volatile oil agents, which can form strong films by evaporating the volatile oil agents from the compositions after application of the compositions, have been developed and some of them have been commercialized.

(Problems to be Solved by the Invention)

However, while these cosmetic make-up compositions have sufficient functions with respect to cosmetic durability, they have inferior safety because of the volatile oils blended therein. In addition, these volatile oil agents exhibit high volatility, causing problems upon use such that containers for the cosmetic compositions need high air-tightness, and that the cosmetic compositions exhibit inferior spreadability upon application thereof.

On the other hand, in the case where low-volatile oil agents are employed, the compatibility of the oil agent with the other raw materials is degraded, thereby lowering stability of the final products. In addition, since the compositions having the oil agents need a long time to dry after application, the compositions tend to cause color-transfer.

(Means for Solving the Problems)

Upon diligent research in consideration of the problems described above, the present inventors have discovered that a combination of a dimethylpolysiloxane (viscosity: 1.5 CS) and a cyclic polydimethylsiloxane (pentamer and/or hexamer) as a volatile oil agent can overcome the disadvantages described above, in comparison

with the case where either a dimethylpolysiloxane or a cyclic polydimethylsiloxane is employed independently, thereby achieving the present invention.

In order to confirm the safety of the cosmetic make-up compositions according to the present invention, a primary stimulation test on rabbit skin was carried out with regard to the volatile oil agents employed in the present invention and the conventional volatile oil agents which are generally employed in cosmetic compositions. The test followed the Draize method. The results are shown in Table 1.

Table 1
 Primary stimulation test for rabbit skin
 (The values in Table 1 show stimulation values.)

Sample	Time		
	24 hours	48 hours	72 hours
Dimethylpolysiloxane (1 CS)	4.17	5.00	4.83
• Dimethylpolysiloxane (1.5 CS)	0.17	0.17	0
Cyclic polydimethyl siloxane, tetramer	4.33	4.17	3.00
• Cyclic polydimethyl siloxane, pentamer	0.33	0	0
• Cyclic polydimethyl siloxane, hexamer	0.33	0	0
Isoparaffin (carbon atoms: 8)	5.00	5.00	5.00
Isoparaffin (carbon atoms: 9)	5.00	4.83	4.83
Isoparaffin (carbon atoms: 10)	4.00	3.83	3.67

• Volatile oil agents employed in the present invention

The other components in the cosmetic compositions according to the present invention are a film-forming agent, a powder base agent, and a plasticizer. As the film-forming agents employed in the present invention, there can be preferably mentioned ceresin, ozokerite, microcrystalline wax, solid paraffin, beeswax, carnauba wax, candolilla wax, hardened oil, higher fatty acid ester of epoxy resin, polyethylene, dimethyl trimethyl polysiloxane, monomethyl polysiloxane, glycerol abietate, and the mixture thereof.

As the powder base agents employed in the present invention, which may be conventionally employed in cosmetic compositions, there can be mentioned talc, mica, kaolin, sericite, titanium oxide, iron oxide, organic pigment, ultramarine blue, prussian blue, and the like.

As the plasticizers employed in the present invention, which may be conventionally employed in cosmetic compositions in the form of liquid or paste, there can be mentioned squalane, castor oil, liquid paraffin, cetyl 2-ethylhexanoate, glycerol tri-2-ethylhexanoate, octyldodecyl myristate, octyldodecanol, vaseline, lanolin, dipentaerythritol fatty acid esters, lanolin derivatives, liquid polyisobutylene, and the like.

In addition, the cosmetic make-up compositions according to the present invention can include water, emulsifying agents, pigments, dye, pigment-dispersing agents, perfumes, preservatives, pearling agents, resins, and the like, if necessary, in addition to the essential components described above. In order to produce cosmetic make-up compositions of the present invention exhibiting cosmetic durability and non-color-transfer, and giving excellent feeling upon use, as well as, having high safety, in the case of an oil-type composition, the volatile oil agent (10 parts by weight - 60 parts by weight), the film-forming agent (0.5 parts by weight - 40 parts by weight), and the plasticizer (0.5 parts by weight - 40 parts by weight) are added to the powder base agent (1 part by weight - 50 parts by weight), and the entire mixture is kneaded. In the case of an emulsion-type composition, the

kneaded mixture mentioned above is emulsified using an emulsifying agent, purified water, a moisturizing agent, and the like, as an oil phase. Depending on the form, the emulsion is charged in a tube or a container.

In order to satisfy the cosmetic compositions of the present invention with non-color-transfer property, it is important to define the blending ratio of the film-forming agent, the plasticizer, and the powder base agent, since the three components function as a film-forming after the composition is applied on the skin and subsequently the volatile oil agent is evaporated. It is most preferred to blend the powder base agent, the film-forming agent, and plasticizer in the ratio of 1 : 0.1-1.0 : 0.1-0.9.

If the ratio of the plasticizer is increased, the strength of the film is lowered, and therefore the obtained film tends to be color-transferred by means of physical effects. On the other hand, if the ratio of the plasticizer is decreased, the composition tends to give the skin an uncomfortable feeling and exhibit inferior spreadability.

With regard to the film-forming agent, the influence afforded by the amount thereof tends to show an opposite pattern in the case of the plasticizer. Therefore, much attention must be paid in the blend ratio thereof.

(Examples)

In the following, the present invention will be explained in detail by referring to EXAMPLES. The present invention is not restricted to these EXAMPLES.

Safety Test Method

(1) Test Method

With regard to a foundation composition of EXAMPLE 1 according to the present invention and a conventional foundation composition according to COMPARATIVE EXAMPLE 1, an occlusion patch test was carried out for 48 hours by 20 female panelists who were 21 - 43 years old and healthy.

Panelists: 20 female panelists who were 21 - 43 years old and healthy.

Application part: rear surface of the human body from shoulder to hip.

Test plaster: A1 - test plaster.

Application amount: 0.04 ml.

(2) Evaluation Method

Each of the compositions according to EXAMPLE 1 and COMPARATIVE EXAMPLE 1 was applied to the back (rear surface of the human body from shoulder to hip), and sealed for 48 hours. After the seal was removed, an evaluation was carried out 2 hours after and 24 hours after the removal, on the basis of the Evaluation Standard as follows:

.	Unchanged
±	Pseudopositive
+	Erythema
++	Erythema and papula

(3) Composition and Preparation Method

Table 2
Foundation Composition according to EXAMPLE 1
or COMPARATIVE EXAMPLE 1

Raw materials	EXAMPLE 1	COMPARATIVE EXAMPLE 1
(1) Cyclic polydimethyl- siloxane, hexamer	20.0	-
(2) Cyclic polydimethyl- siloxane, tetramer	-	20.0
(3) Dimethylpolysiloxane (1.5 CS)	15.0	-
(4) Microcrystalline wax	10.0	10.0
(5) Cetyl 2-ethylhexanoate	9.0	24.0
(6) Monomethylpolysiloxane	0.5	0.5
(7) Dextrin fatty acid ester	2.0	2.0
(8) Talc	14.5	14.5
(9) Titanium oxide	15.0	15.0
(10) Red iron oxide	0.7	0.7
(11) Yellow iron oxide	3.1	3.1
(12) Black iron oxide	0.2	0.2
(13) Mica	10.0	10.0

Preparation Method

Components (1) (7) were heated and dissolved at 75°C - 80°C. Separately, Components (8) (13) were mixed and pulverized to form a uniform mixture. The uniform mixture was added to the dissolved mixture, and subsequently the entire mixture was kneaded. The kneaded mixture was subjected to dispersion treatment using a triple roller.

thus producing a foundation according to EXAMPLE 1 or COMPARATIVE EXAMPLE 1.

(4) Results

Table 3
Results of Patch Test

Evaluation	EXAMPLE 1		COMPARATIVE EXAMPLE 1	
	After 2 hours	After 24 hours	After 2 hours	After 24 hours
-	20	20	6	8
±	0	0	5	5
+	0	0	7	6
++	0	0	1	1

From the results described above, it was confirmed that the foundation composition according to EXAMPLE 1 had excellent safety.

Color-transfer Test Method

(1) Test Method

With regard to a rouge composition of EXAMPLE 2 according to the present invention and a comparative rouge composition according to COMPARATIVE EXAMPLE 2, the following test was carried out.

(i) A UV absorbent, escarol 507 (2-ethyl hexyl p-dimethylaminobenzoate) was added to each composition in the amount of 4%. The samples in the defined amounts (20 mg) were applied to the defined area (16 cm²) of the antebrachial inner side. Subsequently, a device equipped

with a test paper was pressed to the skin where the sample had been applied, under a pressure of 2 kg/cm², three times.

The UV absorbent was extracted with ethanol from the test paper. Subsequently, the absorbance thereof at 310 nm was measured using a HITACHI double beam spectrophotometer.

The color-transfer degree was calculated using the following equation:

$$\text{Color-transfer degree} = \frac{\text{Absorbance of the extracted liquid from the test paper}}{\text{Absorbance of the extracted liquid from the sample}} \times 100$$

(ii) With regard to characteristics: stickiness; spreadability; cosmetic durability; adhesion; color-transfer to dish; and removal with tissue, 5-racing evaluation was carried out by thirty female panelists. The higher the evaluation points were, the better the results were.

With regard to the "color-transfer to dish" test, the panelists held white coffee cups between the lips for 5 seconds after they applied the rouge compositions to the lips. Subsequently, the degree of color-transfer to the coffee cup was evaluated by visual observation.

With regard to the "removal with tissue" test, after 5 minutes from the application of the rouge composition, the color-transfer of the rouge composition to the tissue was evaluated.

(2) Composition and Preparation Method

Table 4

Rouge Composition according to EXAMPLE 2
OR COMPARATIVE EXAMPLE 2

Raw materials	EXAMPLE 2 COMPARATIVE COMPARATIVE EXAMPLE 2 EXAMPLE 3		
(1) Cyclic polydimethyl- siloxane, pentamer	20.0	-	-
(2) Dimethylpolysiloxane (1.5 CS)	20.0	-	-
(3) Dimethylpolysiloxane (2 CS)	-	-	20.0
(4) Solid paraffin	2.50	2.50	2.50
(5) Beeswax	8.00	8.00	8.00
(6) Polyethylene	10.00	8.00	8.00
(7) vaseline	9.50	9.50	9.50
(8) Butylhydroxytoluene	0.05	0.05	0.05
(9) Castor oil	-	42.00	22.00
(10) Iron-oxide-treated mica titanium	20.00	20.00	20.00
(11) Red # 202	2.20	2.20	2.20
(12) Red # 201	1.70	1.70	1.70
(13) Yellow # 4 aluminum lake	0.80	0.80	0.80
(14) Talc	5.25	5.25	5.25

Preparation Method

Components (1) - (9) were heated and dissolved at 95°C. Separately, Components (10) - (14) were mixed and pulverized to form a uniform mixture. The uniform mixture was added to the dissolved mixture, and subsequently the entire mixture was kneaded. The kneaded mixture was subjected to dispersion treatment using a triple roller, thus producing a rouge composition according to EXAMPLE 2 or COMPARATIVE EXAMPLE 2.

(3) Results

Table 5
Results of the First Test

	EXAMPLE 2	COMPARATIVE EXAMPLE 2	COMPARATIVE EXAMPLE 3
Color-transfer degree (%)	1.5	29.1	1.8

Table 6
Results of the Second Test

	EXAMPLE 2	COMPARATIVE EXAMPLE 2	COMPARATIVE EXAMPLE 3
Stickiness	4.7	2.1	1.4
Spreadability	4.3	4.5	1.1
Cosmetic durability	4.8	1.3	4.5
Adhesion	4.2	3.0	3.2
Color-transfer to dish	5.0	2.2	4.8
Removal with tissue	4.8	1.9	4.5

From the results described above, it was confirmed that the rouge composition according to EXAMPLE 2 gave excellent feeling upon use and had non-color-transfer property.

EXAMPLE 3

Eye-shadow Composition

(Composition)	% by weight
(1) Cyclic polydimethylsiloxane, pentamer	10.0
(2) Cyclic polydimethylsiloxane, hexamer	20.0
(3) Dimethylpolysiloxane (1.5 CS)	10.0
(4) Carnauba wax	10.0
(5) Higher fatty acid ester of epoxy resin	1.0
(6) Aluminum stearate	2.0
(7) Absorption refined lanolin	0.5
(8) Liquid paraffin	0.3
(9) Methyl para-oxybenzoate	0.1
(10) Talc	20.1
(11) Titanium mica	10.0
(12) Titanium oxide	5.0
(13) Ultramarine blue	10.0
(14) Black iron oxide	1.0

(Preparation Method)

Components (1) to (8) were heated and dissolved at 85°C. Separately, components (9) - (14) were mixed and pulverized to form a uniform mixture. The uniform mixture was added to the dissolved mixture, and subsequently the entire mixture was kneaded. The kneaded mixture was subjected to dispersion treatment using a triple roller, and subsequently charged in a container or a mold, thus producing an eye-shadow composition.

The eye-shadow composition gave excellent feeling upon use, exhibited good cosmetic durability, and had high safety. In addition, it exhibited good stability for a long time.

EXAMPLE 4

Cheek-shadow Composition

(Composition)	g by weight
(1) Cyclic polydimethylsiloxane, hexamer	20.0
(2) Dimethylpolysiloxane (1.5 CS)	20.0
(3) Solid paraffin	5.0
(4) Beeswax	2.0
(5) Ceresin	5.0
(6) Squalane	5.0
(7) Butylhydroxy anisole	0.1
(8) Red #226	1.5
(9) Titanium oxide	2.5
(10) Mica	38.9

(Preparation Method)

Components (1) to (7) were heated and dissolved at 80°C - 85°C. Separately, Components (8) - (10) were mixed and pulverized to form a uniform mixture. The uniform mixture was added to the dissolved mixture, and subsequently the entire mixture was kneaded. The kneaded mixture was subjected to dispersion treatment using a triple roller, and subsequently charged in a container or a mold, thus producing a cheek-shadow composition.

The cheek-shadow composition gave excellent feeling upon use, exhibited good cosmetic durability, and had high safety. In addition, it exhibited good stability for a long time.

EXAMPLE 5

O/W Emulsion-type Foundation Composition

(Composition)	part by weight
(1) Cyclic polydimethylsiloxane, pentamer	4.50
(2) Cyclic polydimethylsiloxane, hexamer	2.00
(3) Dimethylpolysiloxane (1.5 CS)	4.00
(4) Carnauba wax	2.50
(5) Candelilla wax	1.20

(6) Ozokerite	1.30
(7) Lanolin	2.00
(8) Liquid paraffin	2.50
(9) Polyoxyethylene sorbitan monooleate acid ester (Tween 80)	1.00
(10) Sorbitan monooleic acid ester (Span 80)	1.00
(11) Glycerol monostearate (lipophilic type)	0.70
(12) Higher fatty acid ester of epoxy resin	0.20
(13) Red iron oxide	0.11
(14) Yellow iron oxide	0.23
(15) Black iron oxide	0.06
(16) Titanium oxide	1.40
(17) Talc	6.80
(18) Kaolin	9.20
(19) Purified water	55.60
(20) Propylene glycol	3.5
(21) Preservatives	0.10
(22) Perfumes	0.10

(Preparation Method)

Components (1) to (12) as an oil phase were heated and dissolved at 80°C - 85°C. Separately, Components (13) - (18) were mixed and pulverized to form a uniform mixture. Subsequently, Components (19) - (21) were added to the uniform mixture to form a dispersion. The uniform dispersion was gradually added to the solution to emulsify using a homomixer. Component (22) was added thereto at 50°C, and then the entire mixture was cooled to room temperature. The cooled mixture was charged in a container, thus producing a foundation composition.

The foundation composition gave excellent feeling upon use, exhibited good cosmetic durability, and had high safety. In addition, it exhibited good stability for a long time.

EXAMPLE 6

Eye-liner Composition
(Composition)

% by weight

(1)	Cyclic polydimethylsiloxane, hexamer	2.00
(2)	Dimethylpolysiloxane (1.5 CS)	3.00
(3)	Candelilla wax	6.00
(4)	Ozokerite	1.50
(5)	Glycerol abietate	0.30
(6)	Glycerol monostearate	1.00
	(self-emulsifying type)	0.20
(7)	Sorbitan monostearate	1.00
(8)	Stearic acid	52.05
(9)	Purified water	0.05
(10)	Hydroxyethylcellulose	0.50
(11)	Colloidal magnesium aluminum silicate, hydrate	0.20
(12)	Potassium hydroxide	10.00
(13)	Ethyl acrylate - methyl methacrylate copolymer	15.00
(14)	Black iron oxide	5.00
(15)	Talc	0.20
(16)	Preservatives, perfumes	

(Preparation Method)

Components (1) to (8) were heated and dissolved at 80°C - 85°C. Separately, Component (9) was mixed with Components (10) - (15) and the entire mixture was pulverized to form a uniform mixture. The uniform mixture was added to the dissolved mixture. The entire mixture was emulsified using a homomixer, and subsequently cooled. Component (5) was added to the cooled mixture at 50°C, and then cooled to room temperature. The cooled mixture was charged in a container, thus producing an eyeliner composition.

The eyeliner composition gave excellent feeling upon use, exhibited good cosmetic durability and non-color-transfer, and had high safety. In addition, it exhibited good stability for a long time.

EXAMPLE 7

O/W Emulsion-type Foundation Composition

(Composition)		part by weight
(1)	Cyclic polydimethylsiloxane, pentamer	2.00
(2)	Cyclic polydimethylsiloxane, hexamer	2.03
(3)	Dimethylpolysiloxane (1.5 CS)	11.01
(4)	Squalane	5.43
(5)	Ozokerite	2.28
(6)	Monomethyl polysiloxane	5.05
(7)	Lanolin	3.81
(8)	Magnesium stearate	0.29
(9)	Diglyceryl dioleate	3.76
(10)	Red iron oxide	0.42
(11)	Yellow iron oxide	0.11
(12)	Black iron oxide	0.08
(13)	Talc	6.32
(14)	Purified water	49.21
(15)	glycerol	8.00
(16)	Preservatives, perfumes	0.20

(Preparation Method)

Components (1) to (9) were heated and dissolved at 80°C - 85°C, and subsequently uniformed. Components (10) - (13) were added to the dissolved mixture to form a uniform dispersion. Separately, components (14) to (16) were heated and dissolved at 80°C. The dissolved mixture was added to the uniform dispersion to emulsify using a homomixer. The entire mixture was cooled, thus producing a foundation composition.

The foundation composition gave excellent feeling upon use, exhibited good cosmetic durability and non-color-transfer, and had high safety. In addition, it exhibited good stability for a long time.

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